JetBox User Manual—How to use Ericsson F3607gw 3G and GPS

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Support Models

JetBox9560/9460 series (JetOS95 v1.3 or above version)

Note: JetOS is Korenix embedded Linux OS.

Introduction

Here are some basics about Ericsson F3607gw MiniPCIe 3G/GPS card:

As Ericsson's naming scheme suggests, ideally we would use /dev/ttyACM0 or /dev/ttyACM1 as a modem, and /dev/ttyACM2 for GPS.

This document will teach you how to use a serial modem for internet access with Wvdial, and acquiring the GPS information using the gpsd.

Turning the card on

```
# /etc/init.d/f3607gw start
```

Check the output to see if anything goes wrong.

```
[root@JetBox 9560 /root]# /etc/init.d/f3607gw start
Detecting F3607gw card..done
Turning on F3607gw card...done
```

Check the card status and signal strength

```
# /etc/init.d/f3607gw status
```

If the previous step success, the card status should be “power on”.
The signal quality has 6 levels:
Off < Weak < Normal < Good < Very Good < Excellent

```
[root@JetBox 9560 /root]# /etc/init.d/f3607gw status
Getting Card status ..done
Status:          Power On
Getting Signal quality ..done
Signal:          Very Good
```

Connecting to the internet via wvdial

WvDial is a Point-to-Point Protocol dialer: it dials a modem and starts pppd in order to connect to the Internet. When WvDial starts, it first loads its configuration from /etc/wvdial.conf.

wvdial.conf

The configuration file /etc/wvdial.conf is the equivalent to the Windows "ini" file format, with sections named in square brackets and a number of variable = value pairs within each section.

Here is a sample configuration file for Ericsson F3607gw:

```
# /etc/wvdial.conf - wvdial configuration file

[Dialer Defaults]
Phone = *99#
Stupid Mode = 1
Init1 = ATZ
Init2 = ATQ0 V1 E1 S0=0 &C1 &D2 +FCLASS=0
Init3 = AT+CGDCONT=1,"IP","internet"
Modem Type = Analog Modem
Baud = 115200
New PPPD = yes
Modem = /dev/ttyACM0
ISDN = 0
Dial Command = ATDT
Username = username
Password = password
```

A wvdial.conf example

This example uses Init3 to setup **APN** as *internet*. Changes with your apn and don't remove double quote. For example, in Taiwan, we use internet as APN.

When WvDial is in **Stupid Mode**, it does not attempt to interpret any prompts from the terminal server. It starts pppd immediately after the modem connects. Apparently there are ISP's that actually give you a login prompt, but work only if you start PPP, rather than logging in.

Phone: customize to your country or provider for internet connection.
i.e.: in Taiwan, we use *99#

Username, **Password**: change with your username and password if needed, and set **Stupid Mode** to 0. Some providers don’t use username and password; you can just leave them blank.

Modem: The location of the device that **wvdial** should use as your modem.
i.e.: for Ericsson F367gw, it uses /dev/ACM0.

Connecting to the internet for the first time

First, Enter wvdial at the root prompt to connect:

```
# wvdial
```

Wvdial initialises the modem and connects to the ISP's server.

```
# wvdial
--> WvDial: Internet dialer version 1.61
--> Cannot get information for serial port.
--> Initializing modem.
--> Sending: ATZ
OK
--> Sending: ATQ0 V1 E1 S0=0 &C1 &D2 +FCLASS=0
OK
--> Sending: AT+CGDCONT=1,"IP","internet"
OK
--> Modem initialized.
--> Sending: ATDT*99#
--> Waiting for carrier.
CONNECT 7200000
--> Carrier detected.  Starting PPP immediately.
```

Wvdial starts the pppd daemon.

```
--> Starting pppd at Tue Jun  8 23:47:02 2010
--> Pid of pppd: 1235
--> Using interface ppp0
--> local  IP address 116.59.241.151
--> remote IP address 10.64.64.64
--> primary   DNS address 213.229.248.161
--> secondary DNS address 193.189.160.11
```

Testing the connection

Use Ping to test the connection by querying the ISP's nameservers with a domain name eg. www.google.com. Open a terminal or terminal window and enter the ping command. You should see replies like these.

```
# ping www.google.com
PING www.google.com (64.233.181.104): 56 data bytes
64 bytes from 64.233.181.104: seq=0 ttl=45 time=359.476 ms
64 bytes from 64.233.181.104: seq=1 ttl=45 time=356.268 ms
```

```
64 bytes from 64.233.181.104: seq=2 ttl=45 time=346.154 ms
64 bytes from 64.233.181.104: seq=3 ttl=45 time=336.108 ms

--- www.google.com ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 336.108/349.501/359.476 ms
```

Hanging UP

Hang up with ctrl-C (hold down the Control key and press the C key).

```
Caught signal 2:  Attempting to exit gracefully...
--> Terminating on signal 15
--> Connect time 108.3 minutes.
--> Disconnecting at Wed Jun  9 01:35:23 2010
```

Using F3607gw as a GPS receiver

Once the card is turned on, we can use it to get GPS info via NMEA protocol. First, you have to configure the a few NMEA options.

```
# /etc/init.d/f3607gw gps start
```

```
[root@JetBox 9560 /root]# /etc/init.d/f3607gw gps start
Starting NMEA stream on /dev/ttyACM2...done
```

Check GPS status

If nothing goes wrong, you can then check the GPS status with:

```
# /etc/init.d/f3607gw gps status
```

```
Getting GPS status ..done
        GPS receiver Searching
        Temperature Normal
        Enable GPS positioning in standalone mode
```

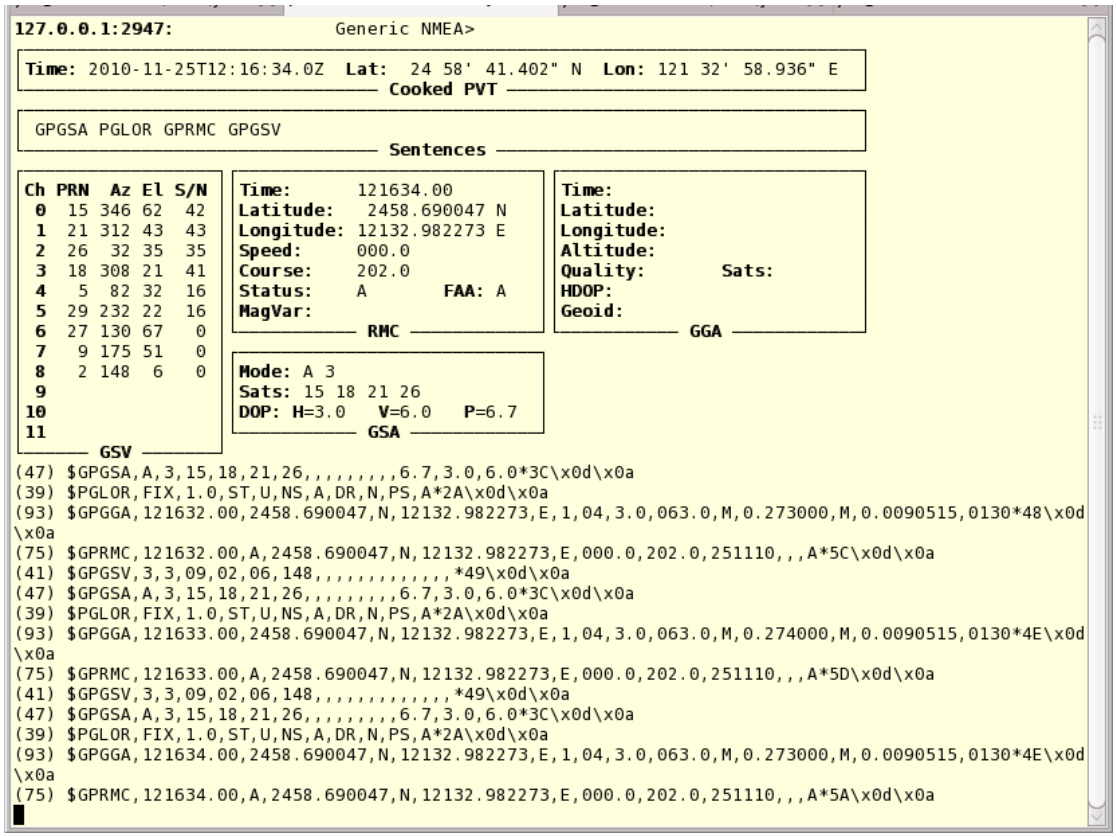
If the GPS signal is OK, the GPS status will turn in to “Locked and Tracking” in a few minutes.

```
[root@JetBox 9560 /root]# /etc/init.d/f3607gw gps status
Getting GPS status ..done
        GPS receiver Locked and Tracking
        Temperature Normal
        Enable GPS positioning in standalone mode
```

GPS detail information

gpsmon is a monitor that watches packets coming from a GPS and displays them along with diagnostic information. You can use `gpsmon` to see the detail GPS information:

```
# gpsmon
```



Turning off GPS

```
# /etc/init.d/f3607gw gps stop
```

Turning the card off

```
# /etc/init.d/f3607gw stop
```

NOTE

- The Ericsson F3607gw module, gpsd, and the /etc/init.d/f3607 script are included in firmware v1.3.
- The card will not work without an inserted SIM, even the GPS function. If you want to use just GPS, any SIM would work, even if it is not attached to any active account with any GSM provider.

References:

- http://en.wikipedia.org/wiki/Wvdial
- http://newbiedoc.berlios.de/wiki/Setting_up_a_serial_modem_using_Wvdial
- http://linux.die.net/man/5/wvdial.conf
- http://linux.die.net/man/1/wvdial
- http://gpsd.berlios.de/gpsmon.html
- http://gpsd.berlios.de/gpsd.html
-

Release Version

V0.0.3 by 2011/1/19

- Add mobile signal check function

V0.0.2 by 2010/12/28

- Add JB9460 series in supported models

V0.0.1 by 2010/12/13